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Ref: 8EPR-N

RE: Comments on Denver Union Station
Draft Environmental Impact Statement
CEQ#20060088

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RTD-FasTracks Office
1560 Broadway, Suite 700
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Community Planner
Federal Transit Administration Region 6
12300 W. Dakota Ave., Suite 310
Lakewood, CO 80228-2583

Dear Mr. Shelly and Mr. Beckhouse:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4321, et. seq., and Section 309 of the Clean Air Act, the Region 8 Office of the Environmental Protection Agency (EPA) has reviewed the referenced Draft Environmental Impact Statement (DEIS) for Denver Union Station (DUS), Denver, Colorado. Section 309 of the Clean Air Act directs EPA to review and comment in writing on the environmental impacts of any major federal agency action. EPA's comments include a rating of both the environmental impact of the proposed action and the adequacy of the NEPA document.

Union Station is one of Denver's most historically prominent buildings, and in the past, the station served as an important transportation hub for cross-country and regional rail travel. With the arrival of the railroad in 1870, Union Station was built in 1881 as a cooperative venture to consolidate several small stations into one large facility to better serve the traveling public. The Union Station building was listed on the National Register in 1974 and was designated as a Denver Landmark in October, 2004.

The purpose of this project is to transform Union Station into a multimodal transportation center servicing the Metro Denver Region and the entire State of Colorado. Improving Union

Station will bring together the various modes of transportation planned in the region into one place and will provide efficient and convenient access to and from downtown Denver. With a projected population and employment increase of approximately 50% by 2030, the City and County of Denver has identified several transportation mode solutions such as bus rapid transit, light rail, passenger rail, and high-occupancy vehicle lanes to help relieve congestion, improve air quality, and offer additional transportation options to citizens within the metropolitan region.

General Comments:

Overall, the DEIS is well written, and the document thoroughly evaluates environmental impacts on a project scale. The comparison of direct impacts and mitigation by alternative, shown in Table 5-20, is a valuable reference for matching projected environmental impacts with the proposed mitigation to reduce impacts. Table 5-21, relating construction impacts with proposed mitigation, is also a valuable reference for the public and the decision maker. Overall the air quality analysis demonstrates that the project is not likely to cause or contribute to a violation of the National Ambient Air Quality Standards. (NAAQS).

EPA is unclear as to the extent of the decisions to be made based on this document. What is the proposed action? As stated in the Preface, the DEIS focuses on two phases: the complete build-out of improvements referred to as the Vision Plan Alternative (the Build Alternative) and the initial phase of the build-out referred to as Phase I. Then in Section 2.7.3 titled "The Build Alternative", the document states that "the Vision Plan Alternative and Phase I of the Vision Plan Alternative ... represents the Build Alternative ...". So, the Preface says that the build alternative is the Vision Plan Alternative whereas the following sections say that the build alternative is the Vision Plan Alternative and Phase I of this alternative. EPA recommends that the definition of the Build Alternative be refined. Possibly, the Build Alternative, from which a Record of Decision is to be made, is only Phase I of the project, and the Vision Plan is more of a "reasonably foreseeable future action" from which cumulative impacts can be evaluated.

EPA recommends that a timeline for Union Station's development be included in the EIS. From a phone conversation with the Denver Regional Transportation District (RTD), EPA understands that Phase I construction should commence by late 2009 with a projected completion date of 2013 which also coincides with the completion of the West Corridor Light Rail Line. If this information is correct, then it should be clearly stated in the EIS.

As clearly stated in the DEIS, DUS redevelopment is part of a larger plan which is FasTracks. The cumulative effects section of the DEIS appears to be mainly focused on the DUS and its immediate vicinity. With DUS being the hub for the FasTracks project, a connected effect of DUS's development is the development around future train stations in the outlying areas surrounding Denver. EPA recommends using the "Delphi-Plus" method to analyze the secondary effects resulting from FasTracks. For example, housing and retail development around light rail/passenger train stations will likely have higher density than what is typical for metro Denver. The commercial and residential areas around transit stations will also have higher pedestrian traffic than what currently is seen in the suburbs of Denver. EPA understands that quantitative analysis for secondary and cumulative environmental impacts is difficult without

more specific plans. However, some qualitative statements, about the effects of future development around outlying transit stations, are possible. A copy of the Delphi-Plus Methodology for Assessing Indirect Induced Growth Effects is enclosed with this letter.

Specific Comments:

Pg. 5-19, Section 5.12 – The "Denver Union Station Vision Plan Air Quality Technical Report" is referenced with a September 2005 version and a February, 2006 version. Please provide a copy of the latest version to EPA.

Pg. 5-22, Section 5.12.3 - The PM_{10} estimated concentrations are especially useful in disclosing possible impacts of the project and EPA recommends that this method of estimating PM_{10} concentrations be used on other transportation projects especially highway projects.

Pg. 5-23, Section 5.12.3 - The analysis indicates that no NAAQS are exceeded, however the project does increase emissions compared to the no-action alternative in many locations. Of note is the PM_{10} 24-hour estimated concentrations at 15th and Wazee of 127 ug/m^3. It is possible that for several hours through a day that the concentration at this location is well in excess of 150 ug/m3. When combined with increased locomotive and bus emissions, there is a possibility of a PM_{10} hot spot. EPA suggests the mitigating diesel emissions from bus and locomotive sources be included in the ROD for this project, especially in consideration of the increased toxics emission trend and the very close proximity of residences.

Pg. 5-25, Section 5.12.4 - DUS is located with the Denver 8-hour ozone non-attainment area. As such, the NOx and VOC emissions trend would be a useful tool to determine if the impact of the project will increase or decrease the emissions of these ozone precursors relative to the no-action alternative. In addition, the DEIS assumed that, other than Amtrak, all locomotives purchased after 2005 would meet EPA Tier 2 standards. Please clarify why this was assumed. If all rail vehicles, other than Amtrak, are expected to be newly manufactured, then this assumption may be appropriate.

Pg. 5-30, Section 5.12.6 - The air toxics trend analysis is also a useful tool in assessing possible impacts and EPA recommends where appropriate this methodology be employed for other projects.

Pg.5-28, Section 5.12.3 - The DEIS appears to estimate the impacts of vehicle traffic separately from the train and bus traffic emission's impact. The cumulative air quality impact could be greater that either of these sources separately. There are likely to be several locations where vehicle traffic emissions and bus/train emissions are near enough to cause a higher emission level than either source separately. Please analyze the combined impact of these emissions.

Pg. 5-61, Section 5.19.15 – The construction emissions from this project are likely to continue for several years, and many residents and businesses are located in close proximity to the project. EPA does note the increased diesel construction emissions control measures suggested in the DEIS. However, EPA suggests that the dust and diesel emissions measures noted, as well as several others, including the required use of highway grade ultra low sulfur diesel or biodiesel, mandatory idling restrictions, and diesel exhaust treatments such as oxidation catalysts, all be written into construction contract requirements for this project.

Pg. 5-77, Section 5.21.11 – A semi-quantitative regional air emissions is possible. As stated on pg. 5-71, the *Review of the RTD FasTracks Plan* estimates that approximately 474,000 fewer vehicle miles will be driven per weekday in 2025 in the Denver Region with FasTracks. Can an estimate of reduced vehicular emissions be made? In addition, the electrical requirements of operating the light rail systems will require additional capacity for electric generating facilities that will increase fossil fuel combustion emissions. On a region-wide basis, can an estimate be made of whether or not the reduced vehicle emissions will offset the increased emissions from the additional electric power plant emissions and additional diesel powered locomotive emissions? Section 5.21.1 states that "From a cumulative standpoint, DUS and … FasTracks system will have a positive net benefit to the existing transportation network and the environment." Can this statement verified with some analytical analysis?

Pg. 5-77, Section 5.21.12 - EPA recommends that a statement be included about the likely increased ambient noise levels for residents living near future passenger rail lines and rail stations.

Pg. 5-78, Section 5.21.16 – EPA recommends that a statement be included stating that increased runoff will likely occur at the sites of future train/bus stations due to the building of large parking structures and higher density housing in the near proximity to the station.

EPA is rating all of the action alternatives (Vision Plan alternative and Phase 1 of the Vision Plan alternative) in this DEIS as an EC-1. "EC" (Environmental Concerns) signifies that the EPA review of the DEIS identified environmental impacts that should be avoided in order to fully protect the environment. For this project, reducing operational and construction related air contaminants are of special concern due to the close proximity of residents. The "1" signifies that the DEIS adequately sets forth the environmental impacts of the action alternatives. We have enclosed a summary of EPA's rating criteria and definitions.

We hope these comments are useful. If you have any questions or would like to discuss our comments, please feel free to contact either Robert Edgar at 303-312-6669 or me at 303-312-6004.

Sincerely,

for Larry Svoboda
Director, NEPA Program
Ecosystems Protection and Remediation

Enclosures (2)

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"Delphi-Plus": A Methodology For Assessing Indirect Induced Growth Effects (as of 5/10/2004)

1. Collect data on existing land uses.

2. Collect and map data from the MPO at the TAZ level on future 2030 land use without any transportation improvements. The source for this in the Denver metro area will be the DRCOG 2030 data for the RTP (without transportation improvements). For North I-25, 2030 population and employment data without the transportation improvement will be used. Data from the local jurisdictions on future land use and known development proposals will also be collected. Bubble diagrams will be prepared from an interpolation of future land use plans and TAZ data on future population and employment.

   These interpolations of the No-Action land use will be presented to the expert panel described in Step 7, so they can assist with any contradictions.

   The land use effects of the build alternatives will be compared against the No-Action Alternative.

3. Identify the land use influence area to be assumed for each of the reasonable alternatives to be fully assessed in the DEIS. For new highways, the research indicates that the maximum area of possible effect is approximately five miles on either side and at both ends. For widening of existing highways, a width of one mile either side and five miles at both ends should be used. For new interchanges, a study area radius of three miles around a new interchange should be used. For new transit stations, a study area radius of one mile should be used. In addition, at the ends of line for transit stations, a radius of five miles should be used.

   Note: This land use influence area is the maximum expected. Individual corridors may wish to reduce this size depending on the scale of existing development and the availability of alternative transportation.

   Note: Based on the Census data, community in Douglas County, Denver, Boulder, Arapahoe, Adam, and Jefferson Counties are willing to travel longer distances to work than commuters in Weld or Larimer Counties. Travel times in all counties have increased by two to five minutes between 1990 and 2000.

4. For the land use influence area, identify the market forces that would likely determine whether or not land use changes would occur. These forces will likely serve as a limiting factor on development within the land use influence area. These forces include:

   a. Proximity to a point of access to the improvement (for new highways and new transit lines, growth initially concentrates around access points such as interchanges).

   b. City and county comprehensive plans and zoning.

   c. Land that is either vacant, underutilized or has the potential for redevelopment.

   d. Sub-area economy (forecasted growth) and regional control totals.

   e. Availability of infrastructure (water, sewer), including staging and sizing.

   f. Public opinion/public policy in the jurisdiction overall.

   g. Presence of other constraints (acquired open space, severe topography).

5. From a compilation of the market forces, determine which of the areas within the land use influence area could receive development pressure. This will vary by alternative. Factors to consider in making this determination are ingress and egress provided to the site, surrounding uses, availability of financial resources, market opportunity, competitive supply and public interest. The likely location of the No-Action land use (identified in Task #2) will also be a factor. This will need to be assumed from the TAZ and jurisdictional data, then confirmed by the expert panel.

   For US 36, North I-25, and I-70, this analysis will be done for opening day as well as design year, since FTA is one of the lead federal agencies.

6. Assign possible land use types to these areas for each of the reasonable alternatives developed. Commercial land uses tend to concentrate in immediate proximity to an interchange, with medium or higher density residential uses adjacent to the commercial uses. Around transit stations, land use type typically varies based on existing adjacent land use or planned future land use. For new highways, research has shown that growth is typically re-allocated from elsewhere in the region. DRCOG will have new research results in July 2004, which will verify this.

Document which facility type is likely to have more of an impact on inducing growth:

- Highway widening will have the least impact.
- New highway or transit lines will have more of an effect. If the project is in a suburban area, a new highway will have more of an effect than transit. If in an urban area, transit will have more effect.
- New interchanges will have more impact.

The intensity of land use change will also vary by transit technology:

- Induced land use will be more intense with BRT, LRT and Commuter Rail in a more urban setting. BRT may have some induced growth except where city or counties specifically support and encourage TODs, commuter rail will induce low density, typically commercial or retail targeted at auto uses and LRT will have medium to high density TOD growth, as supported by local jurisdictional planning.
- Induced land use will be less intense with Commuter Rail in a more suburban or rural setting.

The product of this step will be bubble diagrams for each reasonable alternative.

7. Provide appropriate documentation to expert panel (city and county planners, transportation planners, EPA, MPO planners, environmental group representatives, real estate specialists, academic experts, economic development specialists). For the North I-25 project, feedback could also be obtained from the Regional LUTRAQS.

   Recommended size of the expert panel is 15 to 18 people.

8. Convene expert panel (using the Delphi technique) to discuss the possible induced population and employment growth within the land use influence area associated with the reasonable alternatives. Use input from expert panel to modify the assumptions developed in Task 6.

   A representative from the MPO will be involved to provide the state, regional and sub-regional forecasted growth.

9. Assign a possible physical location to the possible land use types within the land use influence area. Overlay this information over mapping of critical

environmental resources (wetlands, endangered species, water resources, historic or cultural resources, etc) to determine possible indirect effect of the land use changes for each reasonable alternative on the environmental resources. Some mapping will be already in place from the EIS analysis; the remainder will be readily available mapping. This analysis will be qualitative to identify what resources could be affected if a particular change in land use occurs.

At the FEIS level, some of the impacts such as air quality will be quantified, as part of the regional conformity analysis. Also at the FEIS level, land use changes will be factored in as part of the RTP process, so quantified population and employment data will be available, as will traffic data that includes the possible land use changes.

10. Document mitigation that is already in place (such as city or county development policies that require open space set asides or Section 404 permitting requirements).

    Determine and document possible additional mitigation (open space acquisition, public policy to manage development (such as Smart Growth), public policy to influence site plans, transportation demand management policies, modify transportation design standards, cost recovery policies).

This analysis will be tailored as needed to fit the characteristics of each corridor.

Supplementary Information:

Matrix of (Partial) Findings
Literature Search: Land Use Impacts of Transportation Projects

Category Type	Project	Findings
New highway	I-494 (Minnesota)	Rapid increase in land value happened first at eastern terminus and one interchange. Twenty years later the corridor was all built out with retail and office uses close to the highway and residential behind that.
New highway	Superstition Freeway (Phoenix)	Effect of freeway was 6 to 7 miles out. Existing homes close by were negatively affected by property value decreases. Up to 6 miles away, residential properties increased in value. Retail and office development is occurring also.

continued

Matrix of (Partial) Findings
Literature Search: Land Use Impacts of Transportation Projects
(continued)

Category Type	Project	Findings
New highway	I-86 (New York)	Within 5 miles of freeway, development of retail, residential, and manufacturing. Study area performed slightly better than control area.
Widened highway	99E—Albany, Oregon 5 miles of 2 to 4 lanes	In the last 20 years, growth distributed throughout the city, not along the corridor. Factors: no new access, recession, limited water and sewage, policies encourage growth elsewhere.
Widened highway	US 97—Bend, Oregon 2 miles of 2 to 4	Development has occurred in the corridor. Factors: policies encouraged growth, strong economy, few large commercial sites outside of the corridor.
Widened highway	OR 99 W—Corvallis, Oregon	No substantial land use changes. Factors: limited water and sewage.
Widened highway	OR 82—Island City, Oregon 2 to 5 lanes; 1.5 miles	Substantial land use changes in the corridor. Factors: study area already developing before widening, rezoning, increased access.
Widened highway	OR 18—McMinnville, Oregon 2 to 4 lanes; 2.2 miles	No substantial land use changes. Factors: city does not promote development, area not attractive for residential uses.
Highway widening	State Highway 9 (Wisconsin) 2 to 4 lanes	Increase in property values near the highway. Retail, office and industrial uses have been induced. Slightly higher residential development compared to control area.
New interchanges	14 new interchanges in Kentucky, Massachusetts, Texas, New York, Minnesota, Pennsylvania	Effect can be seen up to 3 miles away. Improved accessibility can result in induced commercial, retail, and industrial development, but natural resources and zoning can determine where and if such development occurs. Areas that are distressed will not necessarily experience development.
Transit stations	20 stations in BART and METRO systems	Most of the impact occurs within 1/3 mile of the station. Influence of a station is less in suburban area, but will vary based on the public's attitudes toward growth, zoning and land availability. Station areas that have experienced the most growth have strong government support and policy for TOD. Little system wide or changes in regional land use have occurred. Type of development is dependent on zoning and adjacent land uses.

Bibliography

Adams, John and Laura Smith. "Highway Improvements and Land Development Patterns in the Greater Twin Cities area," 1970-1997: Measuring the Connection. University of Minnesota (2002).

Beckwith, James and Glen Weisbrod. "Measuring Economic Development Benefits for Highway Decision-making: The Wisconsin Case," Transportation Quarterly, Vol. 46 No.1 (1992).

Beimborn, Edward and Alan Horowitz. "Measurement of Transit Benefits." Center for Urban Transportation Studies. Milwaukee, WI (1993).

Boarnet, Marlon. "Do Highways Matter? Evidence and Policy Implications of Highways' Influence on Metropolitan Development." University of California (2000)

Boarnet, Marlon. "The Direct and Indirect Economic Effects of Transportation Infrastructure." University of California, Irvine (1996).

Boarnet, Marlon and Nicholas Compin. 'Transit Oriented Development in San Diego County," *APA Journal* (1999). pp. 80-94.

Boarnet, Marlon and Saksith Chalerpong. "New Highways, Induced Travel, and Urban Growth Patterns: A "Before and After" Test." University of California (2002).

Boarnet, Marlon and Saksith Chalerpong. "New Highways, House Prices, and Urban Development: A Case Study of Toll Roads in Orange County, CA," *Housing Policy Debate Vol. 12 Issue 3* (2001).

Brown, Dennis. "Highway Investment and Rural Economic Development: An Annotated Bibliography." Economic Research Service, U.S. Department of Agriculture. (1999).

Cambridge Systematics, Inc and Economic Development Research Group. "Public Transportation and the Nation's Economy: A Quantitative Analysis of Public Transportation's Economic Impact." (1999).

Carey, Jason. "Impact of Highways on Property Values: Case study of the Superstition Freeway Corridor." Arizona Department of Transportation.

Center for Urban Transportation Research. *Community Impact Assessment: A Handbook for Transportation Professionals* (Handbook). University of South Florida: Tampa Fl.

Center for Urban Transportation Studies. "An Overview, Land Use and Economic Development in Statewide Transportation Planning." (1999)

Cervo, Robert. "Road Expansion, Urban Growth, and Induced Travel: A Path Analysis." University of California, Berkley (2001)

Cervo, Robert. "Transport and Land Use: Key Issues in Metropolitan Planning and Smart Growth." University of California, Berkley

Cervo, Robert and Mark Hansen. "Road Supply-Demand Relationships: Sorting Out Causal Linkages." Institute of Transportation Studies, University of California, Berkley (2000)

DRCOG data on park-n-Ride usage at the Mineral LRT Station.

Economic Development Research Group, Inc. and Cambridge Systematics, Inc. "*Using Empirical Information to Measure the Economic Impact of Highway Investments.*" 2001.

ECONorthwest and Portland State University. "A Guidebook for Evaluating the Indirect Land Use and Growth Impacts of Highway Improvements." (2001)

FHWA, "Community Impact Assessment: A Quick Reference for Transportation," September 1996.

Forkenbrock, David and Shauna Benshoff. "Assessing the Social and Economic Effects of Transportation Projects." (2001)

Forkenbrock, David, Sondip Mathur and Lisa Schweitzer. Transportation Investment Policy and Urban Land Use Patterns. (2001)

Gillis, William and Kenneth Casavant. "Lessons from Eastern Washington: State Route Mainstreets, Bypass Routes and Economic Development in Small Towns," *EWITS Research Report Number 2* (1994).

Handy, Susan. "Smart Growth and the Transportation-Land Use Connection: What Does the Research Tell Us?" *New Urbanism and Smart Growth: A Research Symposium* (2002).

Hart, Arno, Daniel Hodge and Glen Weisbrod." Do New Highways Attract Businesses?" The North Country (NY) Case Study. (2003)

Leong, Dennis et al. "Economic and Land Use Impacts Study of State Trunk Highway 29: Phase 1 - Chippewa Falls to Abbotsford, WI. " (2002)

Leong, Dennis et al. *"Relationship of Highway Rehabilitation Projects and Economic Development."* Wisconsin Department of Transportation. (1996).

Litman, Todd. "Land Use Impact Costs of Transportation," *World Transport Policy & Practice, Vol. 1 No.4.* (1995) pp. 9-16.

Moon, Henry. "Land Use Around Suburban Transit Stations." *Transportation, Vol. 17*(1990) pp.67-88.

Moses, Susan, Glen Weisbrod and Steve Wray. "The development Impacts of Highway Interchanges in Major Urban Areas: Case Study Findings." April 2000.

Parsons Brinckerhoff Quade and Douglas, Inc. "Land Use Impacts of Transportation: A Guidebook." (1998).

Parsons Brinckerhoff. "Methods for Evaluating Secondary and Cumulative Land Use Impacts." (February 2003)

Rychnowski, Don et al. "Preliminary Economic Impact of the Southern Tier Expressway: Western Portion." (2003)

Sanchez, Thomas and Kenneth Dueker. *"A GIS Methodology for Assessing the Growth Impacts of Highway Investments."* Portland Statue University.

Seithoff, Brian and Kara Kockelman. "Property Values and Highway Expansions, an Investigation of Timing, Size, Location, and Use Effects."

Seskin, Samuel. "Guidance for Land Use Impacts of Transportation."

Schwager, Diane. "An Evaluation of the Relationships Between Transit and Urban Form" *Research Results Digest*. Federal Transit Administration, Number 7. (June1995)

Transportation Research Board. "Expanding Metropolitan Highways: Implications for Air Quality and Energy Use - Special Report 245" (1995) pp. 174-209.

U.S Department of Transportation. *"Land Use Impacts of Rapid Transit"* (DOT-TPI-10-77-29) 1977.

Weiss, Martin. "Economic Growth from Transportation Improvements: Does it or Doesn't it?" www. fhwa.dotgov/planning/econdev/econdoes.html. 2002

Zhao, Fang et al. *"Modeling the Interaction between Land Use and Transportation Investments Using Spatiotemporal Analysis Tools."* Lehman Center for Transportation Research: 2003.